

NOTES ON THE NATURAL HISTORY, DISTRIBUTION AND IDENTIFICATION OF BRITISH REED BEETLES

IAN S. MENZIES

Villiers Lodge, 1 Cranes Park, Surbiton, Surrey KT5 8AB

AND MICHAEL L. COX

*International Institute of Entomology (an institute of CAB International),
56 Queen's Gate, London SW7 5JR*

The twenty-one British species contained in the sub-family Donaciinae of the Chrysomelidae, often referred to as the 'reed-beetles', are distributed within three genera: *Donacia* (15 species), *Plateumaris* (four species) and *Macrolea* (two species). Most are conspicuous, medium-sized beetles that are to be found resting, often in large numbers, on the foliage of water plants at the margins of lakes and rivers during the summer months. They attract attention on account of their brilliant metallic colours.

Unfortunately the similarity between some of the species has created problems with identification that discourage and confuse. Existing keys frequently use characters that are variable and therefore unreliable. Fowler (1890; iv: 266-279) gave keys to all species of British Donaciinae, but the characters were not illustrated: *Plateumaris* and *Donacia* species were dealt with collectively under *Donacia*, and many specific names then employed are not now in current usage. Joy (1932) provided a key to all British Donaciinae in the correct genera and with currently accepted nomenclature, but his key is very poorly illustrated.

An account of the habits and distribution of donaciine beetles is presented, derived from observations and material collected over many years and deposited with the Department of Entomology at the Natural History Museum, South Kensington (by a large number of field workers). This is combined with a new key supported by colour prints and line drawings, intended to reduce the problems of identification. It is regretted that insufficient space was available to detail the large number of individual records obtained, but a list of the contributors has been included.

DESCRIPTION OF INDIVIDUAL SPECIES, THEIR HABITS AND DISTRIBUTION

Genus *DONACIA*

1. *Donacia cinerea* Herbst
2. *Donacia dentata* Hoppe
3. *Donacia versicolorea* (Brahm)
4. *Donacia crassipes* Fabricius
5. *Donacia clavipes* Fabricius
6. *Donacia vulgaris* Zschach
7. *Donacia aquatica* (Linnaeus)
8. *Donacia marginata* Hoppe
9. *Donacia bicolora* Zschach
10. *Donacia obscura* Gyllenhal
11. *Donacia semicuprea* Panzer
12. *Donacia impressa* Paykull

13. *Donacia thalassina* Germar

14. *Donacia simplex* Fabricius
15. *Donacia sparganii* Ahrens

Genus *PLATEUMARIS*

16. *Plateumaris affinis* (Kunze)
17. *Plateumaris braccata* (Scopoli)
18. *Plateumaris discolor* (Panzer)
19. *Plateumaris sericea* (Linnaeus)

Genus *MACROPLEA*

20. *Macrolea appendiculata* (Panzer)
21. *Macrolea mutica* (Fabricius)

Vice-county maps, with pre- and post-1970 record distributions are given for each species. Vice-county numbers (after Watson) and regions (NCC 1985) are interpreted on maps given in the appendix. Underlined numbers indicate those vice-counties in which a species has been recorded both before and after 1970.

Status categories assigned are as given in Hyman & Parsons (1992).

GENUS *DONACIA* (Greek: *Donax*, a reed: referring to affinity for aquatic vegetation)

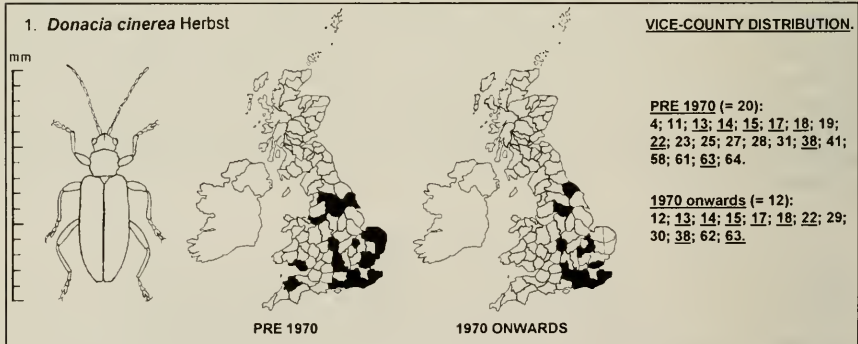
1. *Donacia cinerea* Herbst, 1784 (= *hydrochaeridis* Fabricius, 1801)

Status: **Notable B**

(Latin: *cinerarius*, a slave who heated in hot ashes the irons for the hairdresser, referring to the ashy-grey dorsal surface pubescence). L = 7.5–11.0 mm; Plate I, Figure 1.

This species is unique among the group in having a uniform covering of short white pubescence which tones the underlying bronze surfaces to an attractively glistening silver-grey or pale fawn colour. It has a localized distribution, though usually quite plentiful where it occurs. The adults are to be found mainly in May, June and early July, usually sitting on the leaves of reedmace (both *Typha latifolia* L. and *angustifolia* L.) growing in still water at the margin of lakes, ponds and canals rather than the running water of rivers and streams. *D. cinerea* feeds on the leaves of *Typha*, excoriating the upper epidermis, and may be found in company with *D. vulgaris*, as at Bolder Mere, Wisley, Surrey, where the two species share the same foodplant.

Formerly more widespread with pre-1970 records from 20 vice-counties. Post-1970 records are confined to North East, North West, South, South East England and East Midlands, the species appears to have retracted from South Wales, South West England and East Anglia.



2. *Donacia dentata* Hoppe, 1795

Status: **Notable A**

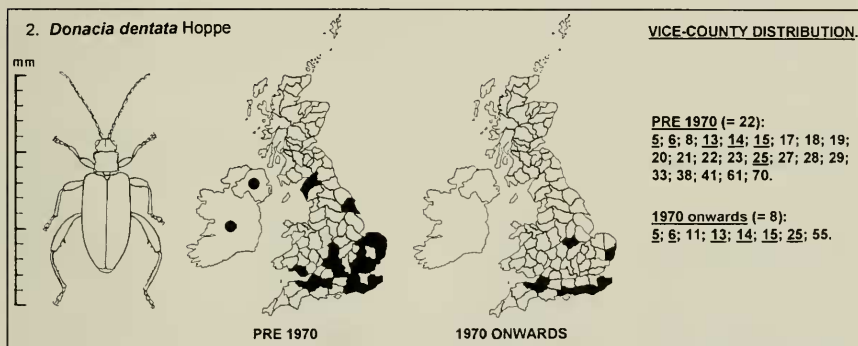
(Latin: *dentatus* toothed; probably referring to the large metafemoral teeth). L = 7.0–10.0 mm; Plate I, Figure 2.

Known now from relatively few localities, this donaciine is usually associated with arrowhead (*Sagittaria sagittifolia* L.). Like *D. crassipes* and *D. versicolorea*, it has disproportionately long bandy hind legs sporting conspicuous femoral teeth but, unlike them, the thorax and elytra in this species are of a brilliant metallic copper-rose or copper-green colour with, especially when viewed in sunlight, a sparkling frost-like quality due to reflection of light from the stria punctures. Further points of

distinction from *D. versicolorea* are the pale red apical halves of the femora (entirely dark in *versicolorea*), and the hind femoral teeth. In *D. dentata*, one of the two teeth on the ventral surface of the hind femora is smaller and situated slightly anterior to the other whereas the male *D. versicolorea* has two teeth of almost equal length set side by side. The female of *D. versicolorea* has only one very small obtuse femoral tooth that is sometimes missing.

The adults of *D. dentata*, like those of *D. versicolorea* and *D. sparganii*, become active during the latter part of the summer, appearing at the end of June and becoming most numerous during late July and August. Binoculars are convenient for observing the beetles which sun themselves on the leaves of their foodplant, often out of reach in the middle of the dykes they inhabit: they are very alert, flying readily to avoid capture. The species can be locally plentiful, and characteristic 'snailtrack' excoriations produced when feeding on the upper surface of arrowhead leaves offer a clue to their presence.

A rare donaciine with recent distribution confined to England. Post-1970 records are from East Midlands, East Anglia, and all regions of Southern England.

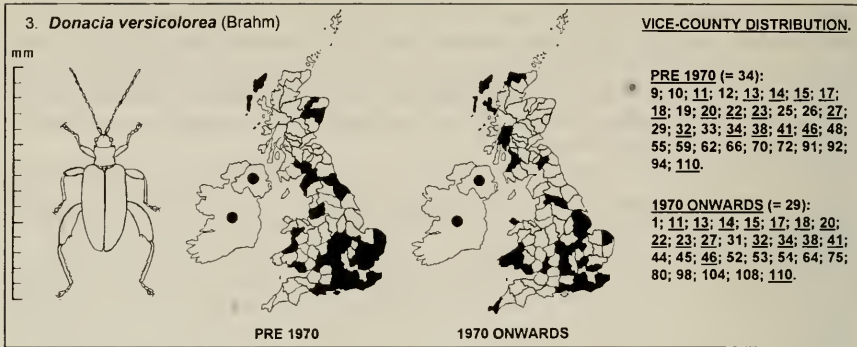


3. *Donacia versicolorea* (Brahm, 1791) (= *bidens* Olivier, 1791)

(Latin: *versicolor*, changing in colour, of various colours). L = 5.5–9.0 mm; Plate I, Figure 3.

Often a plentiful species inhabiting dykes, ponds, canals, fens, heathland pools and moorland rivers colonized by various species of *Potamogeton*. In common with *D. crassipes* and *D. sparganii* this species is often found at rest on the floating leaves of its foodplant. Like *D. crassipes*, with which it may be confused, it has rather flattened dark-coloured elytra, pin-point reflections of light marking the position of the stria punctures; however, it is a smaller species and appears later in the season (July/August) than *crassipes* (May/June/July). The more local *D. dentata* may also be found during July and August in similar localities but has more elongate less flattened elytra, and a brilliant metallic coloration. As with other Donaciinae, *D. versicolorea* is often found on leaves other than those of its true larval foodplant, *Potamogeton*, for example *Glyceria*, *Sagittaria*, *Sparganium* and *Nymphaea*.

A local but widespread species with recent records for N.W., S.W. and S.E. Scotland, North East England, West and East Midlands and all regions of Southern England and Wales.



4. *Donacia crassipes* Fabricius, 1775

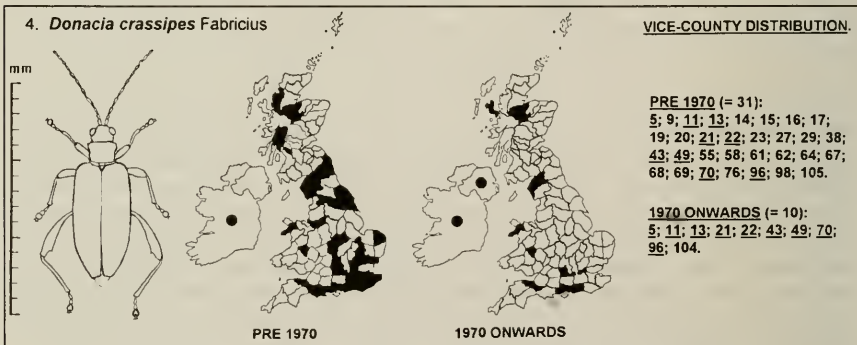
Status: Notable B

(Latin: *crassus*, thick, gross; *pes*, a foot, probably referring to the enlarged hind legs). L = 9.0–11.0 mm; Plate I, Figure 4.

One of the larger British Donaciinae, this local species is associated with waterlilies (both *Nymphaea alba* L. and *Nuphar lutea* (L.) Sm.) growing in lakes, ponds, rivers and canals. The adults, which appear at the end of May, are found mainly during June and July basking in the sun on the upper surface of floating lily leaves upon which they feed. They are best located with the aid of binoculars since they often choose sites well out on the water, and are difficult, at that distance, to distinguish from flies, bees and other insects that frequent the same sites. They are very alert and not easily approached. The beetle has exceptionally long curved hind legs and, like *D. versicolorea*, the elytra have a dark shiny surface with a slight purple or copper reflection. Close examination shows the surface of the elytra to be covered with pin-points of light reflected from the striae punctures, giving a 'starry night' effect, a feature also shared with *D. versicolorea*.

D. crassipes may be distinguished from *D. dentata* and *D. versicolorea*, which also have disproportionately large hind legs, in not having the pronotum strongly rugose but microsculptured throughout with fine grooves and reticulations with only sparse shallow punctures on the disc. In addition, the hind femora have one obtuse tooth or, if two, these are separated by at least twice the length of the anterior tooth.

A moderately widespread but local species recorded from Scotland, Wales and England. Most post-1970 records are from N.W., S.E., S., and S.W. England, Dyfed-Powys and North Wales, and N.W. Scotland.



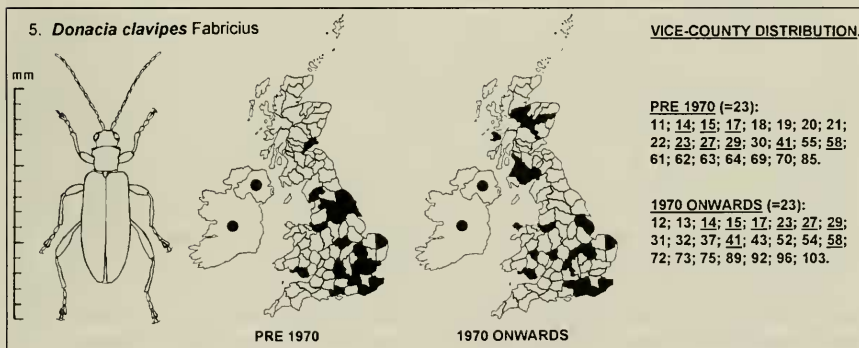
5. *Donacia clavipes* Fabricius, 1792 (= *menyanthis* Fabricius, 1801; & *menyanthidis* Gyllenhal, 1813)
Status: **Notable B**

(Latin: *clava*, a club, or possibly *clave*, cloven; *pes*, a foot; in reference to the conspicuously bilobed third tarsal joint). L = 7.5–12.0 mm; Plate I, Figure 5.

A large donaciine associated with reed-beds (*Phragmites australis* (Car.)) growing in the water of lakes, ponds, canals and fens. The rather elongated parallel-sided elytra of this species are brilliant shining metallic brassy-green or copper, while the legs and antennae are of a distinctive orange-red colour. It has a wide distribution, often abundant where it is found.

D. clavipes should be sought in the reed-beds during May, June and July and can be detected by knocking the reeds over a beating tray or by searching. The beetles are particularly fond of hiding in the basal part of a leaf where it folds around the reed stem. As many as eight individuals have been found in a single leaf-fold (Burton Mill-pond, W. Sussex, 22.v.95, I.M.). When feeding, the insect penetrates the young leaf shoots which later unfold to reveal a transverse series of somewhat irregularly elongated holes. *Plateumaris braccata*, also associated with *Phragmites*, eats into the young shoots in a similar fashion but, in this case, the series of holes produced are usually round, not elongated.

A very widespread locally common species, with post-1970 records for N.W., N.E. and S.W. Scotland, N.E. England, East and West Midlands, East Anglia, S.E. and S. England, Dyfed-Powys, N. and S. Wales.



6. *Donacia vulgaris* Zschach, 1788 (= *typhae* Ahrens, 1810)

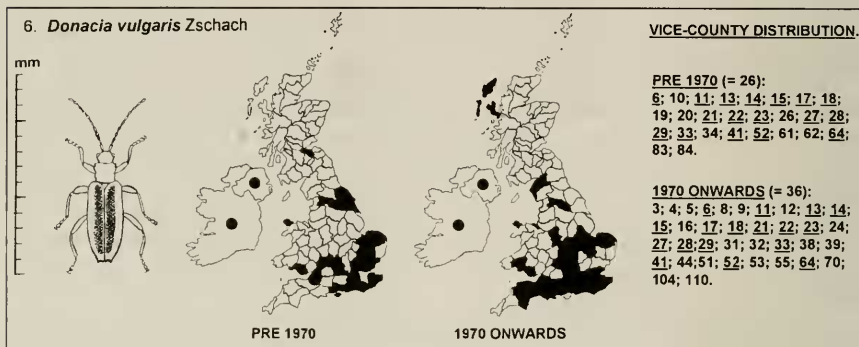
(Latin: *vulgaris*, common, ordinary—being one of the most widespread and commonly occurring species). L = 5.5–10.0 mm; Plate I, Figure 6.

One of the smaller Donaciinae, this species has a wide distribution and is often locally abundant. It is associated with bur-reed (*Sparganium*) and reedmace (*Typha*) growing in rivers, ponds, dykes, canals and fens. The adult beetle is active during May, June, July and August, most records being for June.

D. vulgaris is very similar in shape and size to *D. thalassina* and *simplex* but, unlike them, has multicoloured elytra, usually with a longitudinal band of metallic blue and/or reddish coloration between stria 1 and 5, which contrasts with the pale copper background. Occasionally this band is missing, in which case the absence of a femoral tooth and the partly reddish antennae and legs will distinguish it from *D. thalassina*. Separation of unicolorous *D. vulgaris* from *D. simplex* is more difficult.

The posterior extremities of the elytra are truncated in both species, usually being square and simple in *simplex* but concave and emarginate in *vulgaris*. Examination of genital morphology may sometimes be necessary (see Fig. K41).

A common, widespread species with post-1970 records for N.W. Scotland, and all regions of Wales and England except the North East.

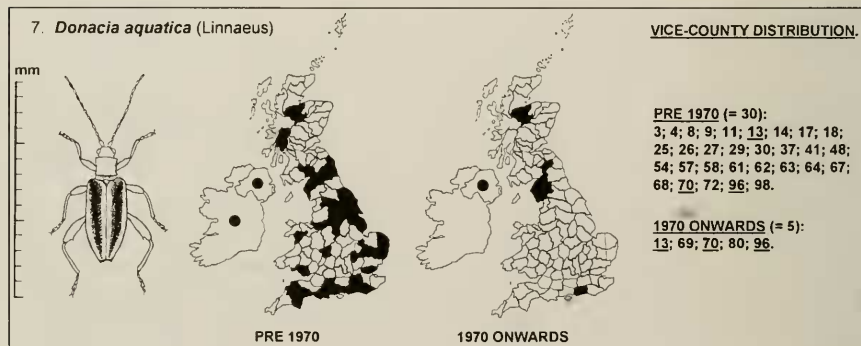


7. *Donacia aquatica* (Linnaeus, 1758) (= *dentipes* Fabricius, 1792) Status: RDB 3
(Latin: *aquatica*, of water). L = 6.8–9.6 mm; Plate I, Figure 7.

Uncommon in the UK, this species is found, usually in small numbers, by sweeping areas of aquatic vegetation dominated by sedges such as *Carex acutiformis* Ehrh. at the margins of open water (lakes and fens) during May and June. Unlike *D. thalassina* and *D. impressa*, it does not appear to be attracted to the flowers of sedge.

Now one of our rarest, this small donaciine is also one of our most beautiful species. The undersurface, legs and thorax are of shining gold, while the elytra are adorned with a broad reddish-purple longitudinal band of rainbow brilliance, commencing light blue between the sutural borders and first stria, then green (interstice 2), purple (interstices 3–5), red (interstices 6–7), pale gold (interstice 8), green (interstice 9) and finally a pale green-blue up to the lateral elytral borders.

A widespread but local species with records for N.W., N.E., and S.W. Scotland, N. and S. Wales, and most regions of England. Post-1970 records show a considerable decline and are from N.W., N.E. and S.E. Scotland, N.W. and S.E. England.



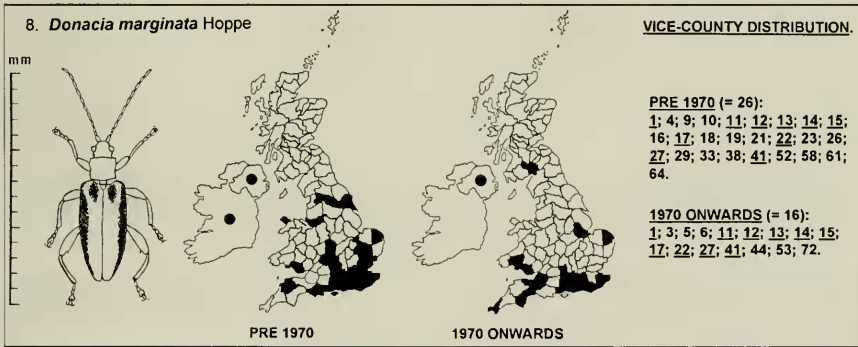
8. *Donacia marginata* Hoppe, 1795 (= *limbata* Panzer, 1796; *lemnae* Fabricius, 1801).

(Latin: *marginata*, provided with a border, probably referring to the elytra which usually have a reddish-purple lateral border). L = 7.5–11.0 mm; Plate I, Figure 8.

This handsome beetle is of a golden-bronze colour with reddish-purple discharges and lateral borders to the elytra. It is often found in large numbers, resting on and eating the upper epidermis from the leaves of the branched bur-reed (*Sparganium erectum* L.) growing at the margins of lakes, ponds, canals and dykes, generally with a preference for still water. The adults of this species enjoy a long season, first appearing about the middle of May but recorded most frequently in June, July and August.

Although of very similar size and shape to *D. bicolora* and *D. obscura*, *D. marginata* can in most cases be differentiated on the basis of coloration. *D. bicolora* is usually of a uniform brilliant golden-green colour; like *D. marginata* it is associated with *Sparganium erectum*, but prefers plants growing along the margin of running water (rivers). *D. obscura* is of a uniform dull bronze colour, and is associated with *Carex* rather than *Sparganium*. The coloured dorsal elytral markings of *D. marginata* may occasionally be entirely missing, in which case the strong dorso-lateral and lateral pronotal rugosities can be used to separate it from other species such as *D. bicolora* and *D. obscura*.

A widespread, locally common species with post-1970 records for S.W. Scotland, Dyfed-Powys and S. Wales, E. Midlands and all regions of Southern England.



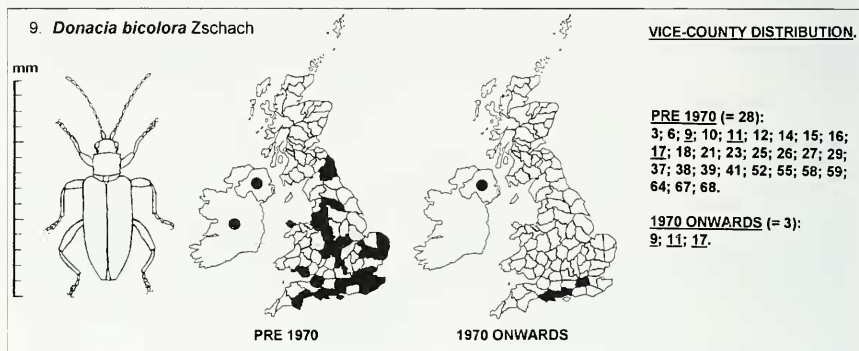
9. *Donacia bicolora* Zschach, 1788. (= *sagittariae* Fabricius, 1792) Status: RDB 2

(Latin: *bicolor*, of two colours, possibly referring to the brassy-green upper body surface and silvery lower surface [but see also J. Denton's observations below]). L = 8.0–11.6 mm; Plate II, Figure 9.

This beetle is noted for its magnificent sparkling greenish-gold coloration (unfortunately not fully conveyed by Figure 9). It is a local species with restricted distribution but may be quite plentiful in favoured localities, for instance the River Wey in Surrey and Stour in Hampshire, where it may be found, in company with *D. simplex*, on the leaves of bur-reed (*Sparganium erectum*) during May, June and July. Sometimes the margins of ponds, lakes and canals are chosen though proximity to flowing water seems to be preferred. Dr J. Denton, studying this species at Elstead, Surrey (May–August 1995), observed that a proportion of the beetles, which are of a constant bright gold or greenish-gold colour during May and June, become

greenish-blue or even a deep purplish-blue colour at the end of their adult season in late July and early August.

Formerly found in N. and S. Wales, East and West Midlands, N.E., N.W., S., S.E. S.W. England and East Anglia, this species is now restricted to three vice-counties, one in each of S., S.E. and S.W. England.



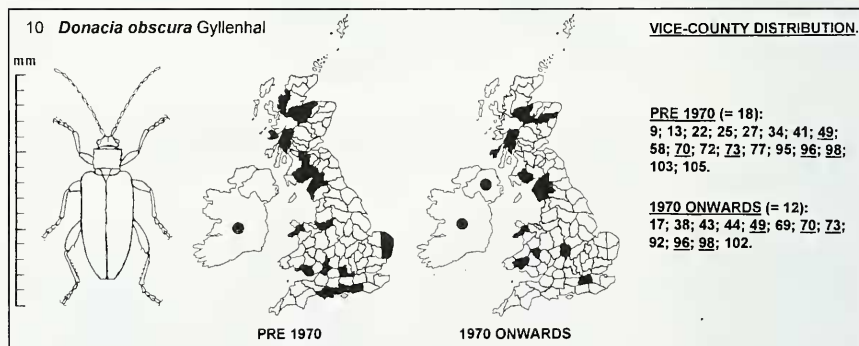
10. *Donacia obscura* Gyllenhal, 1813

Status: **Notable A**

(Latin: *obscura*, dark, obscure; referring to the deep bronze dorsal colour of this species). L = 8.0–10.5 mm; Plate II, Figure 10.

A uniformly dull chocolate-bronze coloured donaciine with well-marked hind-femoral teeth. The elytral impressions are less emphasized than those of *D. marginata* and *D. bicolora* to which *D. obscura* is morphologically similar. The adult beetles may be found by searching or sweeping vegetation dominated by club-rushes and sedges, especially *Carex rostrata* Stokes, growing in boggy areas alongside lochs, lakes and streams from April to July, most records being for June.

Distributed mainly in the north and west of the British Isles, in recent years this species has largely disappeared from the southern counties and East Anglia, remaining widespread although local in Wales and Scotland.

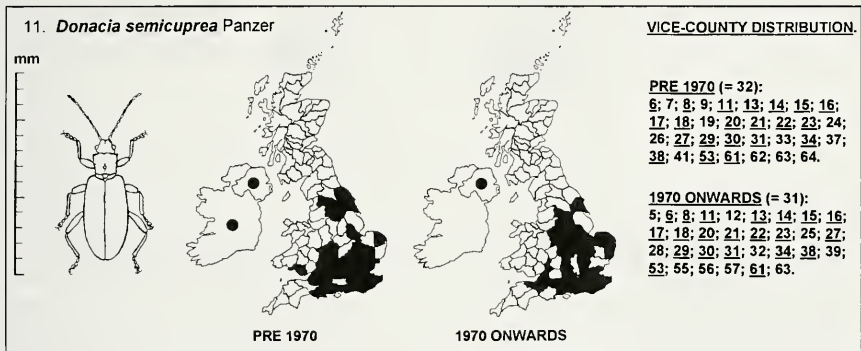


11. *Donacia semicuprea* Panzer, 1796

(Latin: *semicupreus*, half coppery, pertaining to the elytra which are coppery with greenish lateral margins). L = 5.5–8.2 mm; Plate II, Figure 11.

A small, rather convex, donaciine which has an elytral shape approaching that of the genus *Plateumaris*. It is found, often in large numbers, feeding on the leaves of its foodplant, the reed meadow-grass *Glyceria maxima* (Hartm.), during May, June, July and early August. Lakes, ponds, canals and dykes supporting an abundant growth of *Glyceria* are favoured. The dorsal surface is of a shiny copper colour, often with a greenish reflection on the lateral aspects of the elytra, while the head, legs, antennae and underparts, being covered with short white pubescence, appear light grey in colour. The presence of a deep midline pit or sulcus on the dorsal surface of the posterior pronotum is an important point in identification, unique to this donaciine.

A locally common species with post-1970 records for N.E. and N.W. England, E. and W. Midlands, East Anglia and all parts of Southern England, but it is apparently unknown in Scotland.



12. *Donacia impressa* Paykull, 1799

Status: **Notable A**

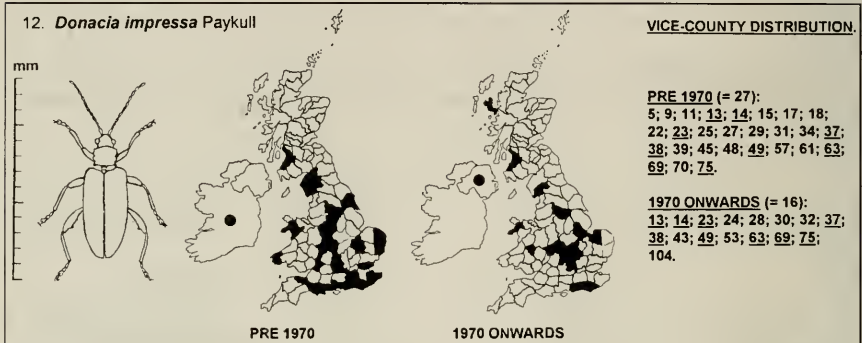
(Latin: *impressio*, distinct impression; probably referring to two deep elytral impressions). L = 6.5–9.0 mm; Plate II, Figure 12.

One of the smaller donaciines, this species is very local but may be seen in large numbers, especially when feeding on the flowers of the tussock sedge *Carex paniculata* L. and lesser pond sedge *Carex acutiformis* Ehrh. during May and June, and also the flowers of bulrush *Scirpus lacustris* L. in August and September. The adult beetles have been recorded from April until November.

D. impressa shows many similarities to *D. simplex* and *D. thalassina* with which some confusion is liable to arise. The impressions on the elytra are usually more distinct, and the metallic copper colour more constant in *D. impressa* than the other two species. *D. simplex* is easily distinguished by having parts of the antennae and legs reddish and hind femora without a tooth, and is usually associated with *Sparganium* rather than *Carex*. Distinction of *D. thalassina* from *D. impressa*, which have similar ecological requirements, is more difficult. Both have dark antennae and legs devoid of reddish coloration, and teeth on the hind femora, though these are usually better developed in *thalassina*, being reduced to a small tooth or knob in *impressa*. The elytra of *D. impressa* are broader and more rounded posteriorly than *D. thalassina* (and *D. simplex*) in which the elytra are quite sharply truncated with well-defined posterolateral angles. Also, unlike most examples of *thalassina*, the sutural borders of the elytra in *impressa* are usually raised to form a keel at their

posterior extremities. The elytral surface is more shining in *D. impressa*, being dull or 'frosted' in *D. thalassina* and *simplex* due to greater emphasis of striae punctation and reticulation.

A widespread locally common species with post-1970 records for N.W. and S.W. Scotland, N.W. England, North Wales and Dyfed-Powys, East and West Midlands, East Anglia, and South East England.



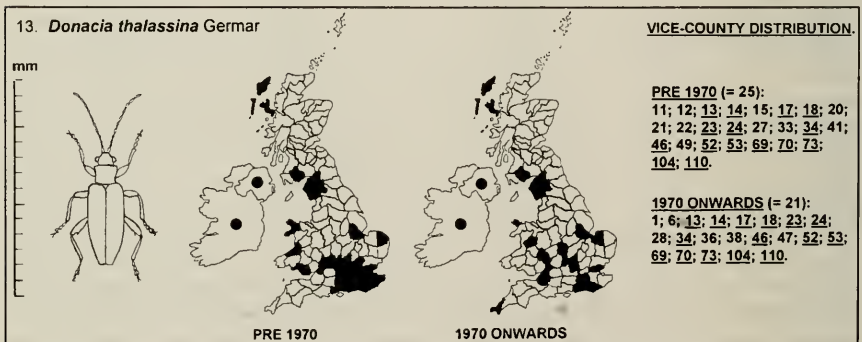
13. *Donacia thalassina* Germar, 1811

Status: **Notable B**

(Latin: *thalassina*, sea green, probably referring to the dorsal coloration of the species which may be greenish or brassy-bronze). L = 6.5–9.0 mm; Plate II, Figure 13.

Like *D. impressa* this is a very local species, also found mainly during May, June and early July. During May it is attracted in numbers to the flowers of the lesser pond and bottle sedges, *Carex acutiformis* and *rostrata* respectively, probably in order to feed upon the pollen. After the sedge flowering period is over (for instance l.vi.95) the beetles have been observed to eat the leaves of *Carex*, and later (8.vii.95) may vacate *Carex* for other water plants such as *Typha* (observations at Bolder Mere, Wisley, Surrey; IM).

Superficially this species is very similar to the ubiquitous *D. simplex* and, like it, is uniformly shining bronze, usually with a distinctly copper tint, but sometimes grey or greenish, on the elytral and pronotal surfaces. Absence of red coloration on the antennae and legs and the usual presence of a metafemoral tooth serves to



distinguish this species from *D. simplex*, but separation from *D. impressa* (to which refer for details) is more difficult.

In view of the ecological similarity of their habitats, it is surprising that *D. thalassina* and *D. impressa* are so seldom found together: possibly a degree of mutual exclusion may exist.

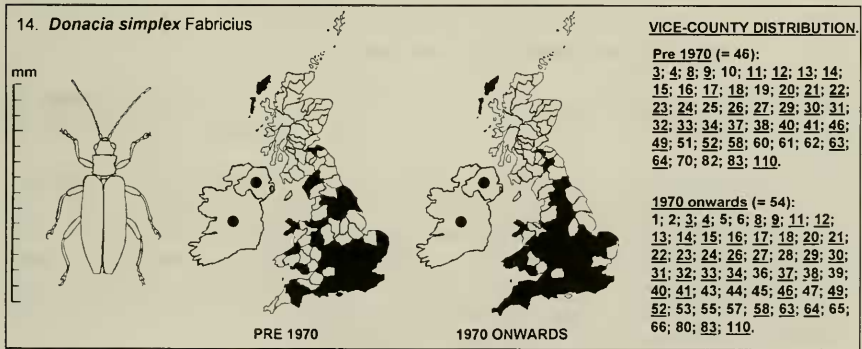
A local, but widespread species with post-1970 records for N.W. and S.W. Scotland, N.W. England, E. and W. Midlands, East Anglia, S.E. and S.W. England, Dyfed-Powys and N. Wales.

14. *Donacia simplex* Fabricius, 1775; (= *linearis* Hoppe, 1795).

(Latin: *simplex*, probably referring to the simple, untoothed hind femora of this species). L = 7.0–11.0 mm; Plate II, Figure 14.

Usually considered to be the most prevalent British donaciine, it is widely distributed and found, usually in large numbers, on the leaves of various species of bur-reed (*Sparganium*) growing in a wide variety of habitats, especially at the margins of ponds, canals and rivers, from about the middle of May to the beginning of August. The adult is usually a frosted metallic copper colour dorsally with a silvery undersurface, but the elytra and pronotum may have a uniform reddish, greyish or even a greenish tint. The legs and antennae are in part reddish-orange, and the hind femora untoothed.

A common widespread species with post-1970 records for North West and South East Scotland, and all regions of Wales and England.



15. *Donacia sparganii* Ahrens, 1810

Status: Notable A

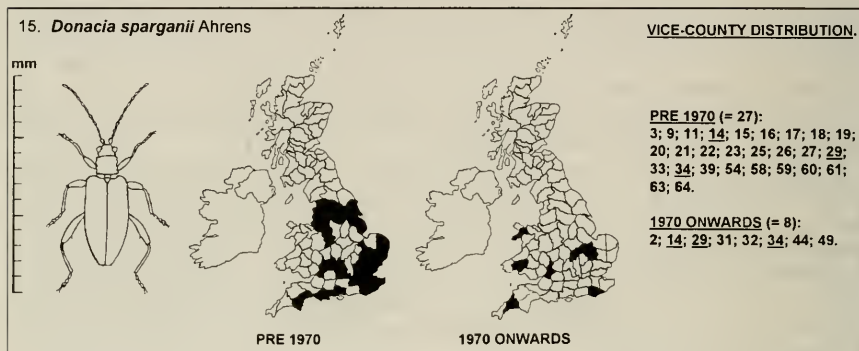
(Latin: *sparganium*, relating to an affinity for the bur-reed plant). L = 6.3–9.1 mm; Plate II, Figure 15.

A medium-sized species of a uniform metallic copper colour with two teeth, one of which is very small, on each hind femora. The elytra have a characteristic 'oily' shining appearance, with a pinkish or greenish reflection in the sunlight. Absence of punctures on the dorsum of the pronotum, which is transversely strigose, is an important point of identification.

This donaciine is known from few sites only, generally in association with species of bur-reed (*Sparganium*). *D. sparganii* is regarded as one of the rarer British species though it may be quite frequent where it is established. Though occasionally found on bank vegetation it is much more likely to be seen (with the aid of binoculars) resting, out of reach, on the floating leaves of *Sparganium* trailing in the current of

streams and rivers. The adult beetles appear during July and August after the *Sparganium* leaves have grown sufficiently to reach the surface of the deeper water.

Formerly recorded from many counties in the north, south and east of England, *D. sparganii* has now become a rare species restricted to only a few localities in Wales, the Midlands and Southern England.



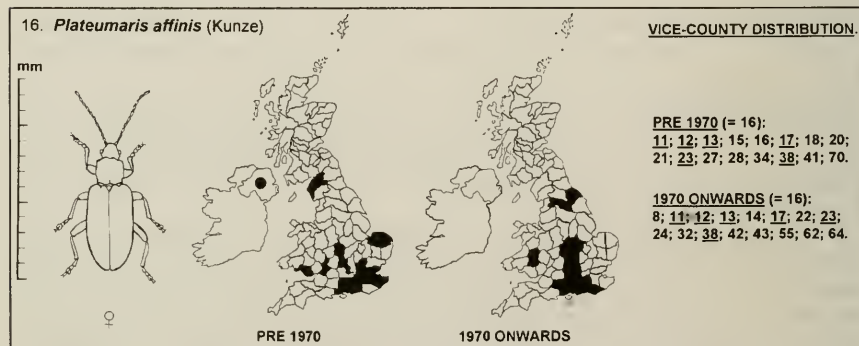
GENUS *PLATEUMARIS*. Very similar to *Donacia*, but legs stouter and elytra more rounded, 'vaulted' dorsally, and mandibles protruding. (Greek: *platys*, broad or flat; *eumaris*, a thick-soled Asiatic slipper. Askevold (1991) considered this to refer to the ovipositor of females in this genus. Alternatively Schenckling (1922) interprets *eumares* to mean easily moveable, but is uncertain to what this refers).

16. *Plateumaris affinis* (Kunze, 1818)

Status: **Notable B**

(Latin: *affinis*; neighbouring). L=5.0–8.0 (male), 7.7–9.0 (female); Plate II, Figure 16.

P. affinis is associated with various species of *Carex* growing at lake margins, sharing the same ecological requirements as *P. discolor*, *Donacia impressa*, *thalassina* and *aquatica*, all of which may be found together during May and June as, for instance, in vegetation dominated by various species of *Carex* bordering Burton Mill Pond, near Fittleworth, West Sussex. *P. affinis*, like *D. aquatica*, is not attracted to the flowers of *Carex* as are *D. impressa* and *thalassina*, and is usually detected by sweeping or searching the leaves and stems of the sedges.



In *P. affinis* the two sexes are distinct in both colour and size, the pronotum and elytra of the male being black with a faint purple or violet reflection, but of a pale copper colour in the somewhat larger female. The legs are reddish yellow in both sexes, with the teeth on the hind femora considerably larger in the male.

A widespread, locally common species with recent records for Dyfed-Powys, North East England, East and West Midlands, South and South Eastern England.

17. *Plateumaris braccata* (Scopoli, 1772) (= *nigra* Fabricius, 1792)

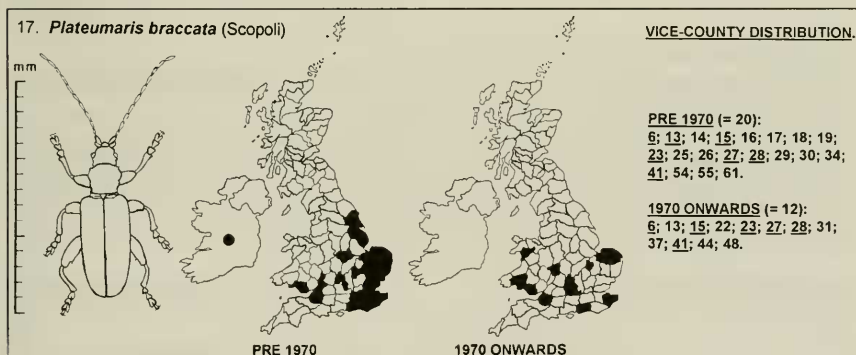
Status: **Notable A**

(Latin: *braccata*; wearing breeches, possibly referring to the conspicuously orange-red legs and ventral abdomen which contrasts with the dark thoracic and elytral surfaces). L = 8.5–12.0 mm.

Both sexes of this large donaciine have black pronotum and elytra with a green or violet reflection, and reddish-orange abdomen, antennae and legs. Though this species is similar in these respects to the male *P. affinis*, direct comparison leaves little doubt about the identification of *P. braccata* which is considerably larger and has a more obvious blue or greenish metallic reflection.

The adult beetles are usually found, during May and June, in beds of the reed *Phragmites australis* growing in water at the margins of lakes, canals and in fens. It is a local species, well established in the fenlands of East Anglia but also found sparingly in Sussex, Kent, and some other southern counties. Like *D. clavipes* it can be found concealed in the *Phragmites* leaf-folds. When feeding, the beetle penetrates the young leaf shoots which later unfold to present a characteristic transverse series of round holes.

A very local species restricted in distribution to Wales (all regions), East and West Midlands, East Anglia, and a few scattered sites in Southern England.



18. *Plateumaris discolor* (Panzer, 1795)

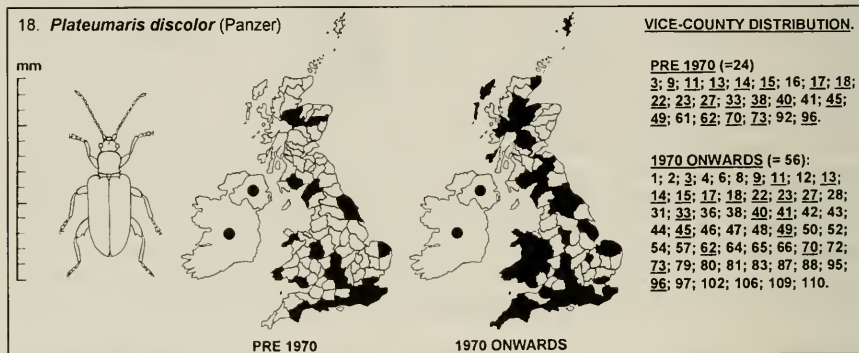
(Latin: *discolor*; of different colours, probably referring to the many different colour forms of this species). L = 6.5–9.0 mm.

P. discolor and *P. sericea* are closely similar in appearance and manifest an astonishing variety of spectacular jewel-like colour forms which include shades of gold, copper, green, blue, violet, purple, magenta, and sometimes black. The elytra, head and thorax are uniformly coloured and the hind femora strongly toothed. *P. discolor* is on average smaller than *sericea* and, in contrast to *P. sericea*, the thoracic disk is strongly punctured centrally and surrounded by marked strigosity. Though *P.*

discolor usually has shorter antennae than *P. sericea*, reliance cannot be placed on differences in the relative lengths of antennal segments 2, 3 and 4 often quoted (but length/width ratios of antennal segment 4 may be more reliable, see Key). The proximal portion of the antennal segments, tarsi and tibiae are usually reddish in *P. discolor* but generally dark in *sericea*.

P. discolor is widely distributed and, though adults have been recorded from March to November, are seen most frequently during June, often in large numbers, on vegetation in boggy moorland areas and around ponds, rivers and canals. This species is usually associated with *Carex*. It may sometimes be found on the flowers of various plants including *Sparganium* and *Caltha palustris* and favours a more acidic environment than *P. sericea*.

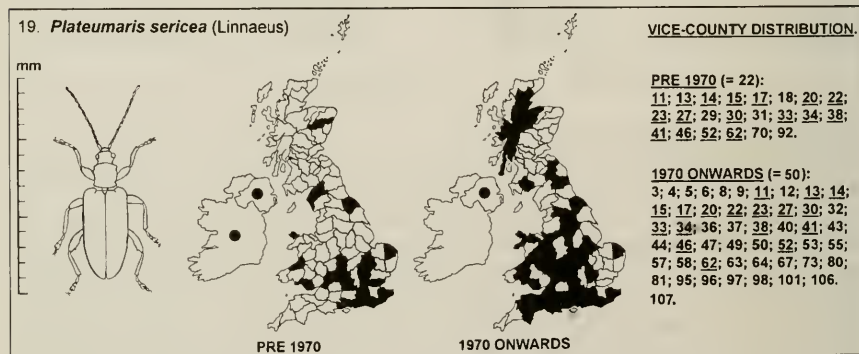
A very widespread, common species with numerous post-1970 records for all regions of Scotland, Wales, and England.



19. *Plateumaris sericea* (Linnaeus, 1758)

(Latin: *sericatus*; clothed in silken garments, probably referring to the silky-like appearance of the pronotum). L = 6.5–10.0 mm.

In most respects similar in appearance and habits to *P. discolor*. The main points of distinction from the latter concern the antennae, which are usually longer and narrower, especially in males; although differences in length between antennal segments are claimed, 4 being more than twice the length of 2 in *P. sericea*, this distinction may not be reliable (but see Key for length/width ratios of antennal



segment 4). The thoracic disk in *P. sericea* is more finely punctured than *P. discolor*, without surrounding strigosity. The adult beetles have been recorded for every month of the year but are most frequently seen during June, usually at rest on aquatic vegetation growing in neutral or basic habitats. This species is usually found in association with *Sparganium* species, especially *S. erectum*, but has also been recorded from the flowerheads of *Iris*, yellow flag.

A very widespread, common species with numerous post-1970 records from all regions of Scotland, Wales and England.

Note. Askevold (1991) synonymized *P. discolor* (Panzer) with *P. sericea* (Linnaeus). He considered that the ratio of the antennal segments 2 and 3, and the coarseness of pronotal rugosity, variable among donaciines and 'in many series of specimens a complete range of pronotal structure from uniformly alutaceous to coarsely rugose on the disc, can be found'. In addition he found no appreciable genitalic differences between specimens from geographically divergent areas such as Poland, Italy and Japan. However it can be contended that it is not the difference in the relative lengths of antennal segments 2 and 3 which is important, but that between 3 and 4 in comparison with 2. There is a significant difference in pronotal rugosity between the two species with little intraspecific variation, and differences between the endophallus of the two species are apparent in his photographs. Ecologically the two species occupy different niches, *P. discolor* in acidic conditions and *P. sericea* in neutral or basic water.

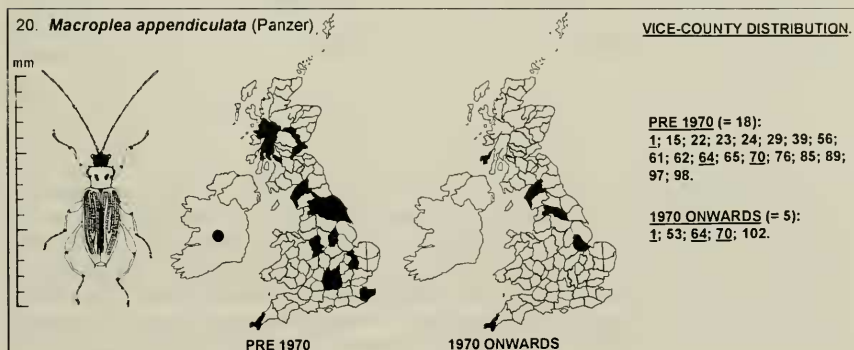
GENUS *MACROPLEA*. (Greek; *macro*, large, and *pleon*, 'swimming').

20. *Macrolea appendiculata* (Panzer, 1794)

Status: **RDB 3**

(Latin: *appendicula*, a little addition, probably referring to the elytral spine).
L = 6.0–7.5 mm.

The two British *Macrolea* differ from *Donacia* and *Plateumaris* in being smaller and of a dull yellowish coloration with head and elytral striae black. Though fully winged, the adult beetles are usually found submerged on the foliage of their foodplant in the water of canals, rivers, lakes and dykes from June to September. *M. appendiculata* was found, for instance, on submerged plants of the alternate-flowered water milfoil *Myriophyllum alterniflorum* DC. growing near the margin of Talkin Tarn, Brampton, Cumb. on 6.vi.92, hidden amongst the comb-like leaves. The beetles, although quite numerous, were very inconspicuous; whereas about 8 were



initially found with difficulty, 16 more eventually emerged from the vegetation as the stems and leaves dried out. Prof. J. A. Owen has found larvae and cocoons of *M. appendiculata* at the roots of *Myriophyllum alterniflorum* growing in Talkin Tarn during the autumn; one adult beetle, observed in captivity, shed its pupal case in the autumn and could be seen overwintering within the translucent cocoon, from which it eventually emerged in February. Adults have also been found in numbers on *Potamogeton pectinatus* L. at Kidlington, in a tributary of the River Cherwell, during June and August.

A widely distributed though local species. Post-1970 records are from South West Scotland, N.E. and N.W. England, E. Midlands and S.W. England.

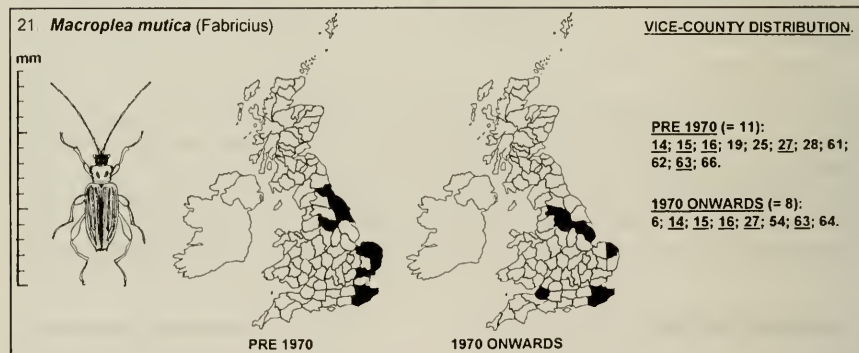
21. *Macrolepta mutica* (Fabricius, 1792) [= *curtisi* (Lacordaire, 1845)]

Status: **Notable A**

(Latin: *muticus*, spineless, referring to the shorter elytral spines). L = 5.0–7.0 mm.

Very similar to the preceding species, this beetle is also found on the leaves of submerged water plants, especially *Potamogeton pectinatus* and *Zostera marina*, usually in brackish clay pits and dykes near the coast. The main points of difference from *M. appendiculata* are the shorter posterolateral elytral spine, and absence of pigmented apices to the femora and tibiae and tarsal joints, though the latter is considered an unreliable character. There are some morphological differences in the male aedeagus.

Apparently not so widespread as *M. appendiculata*. Recent records are from North West England, E. and W. Midlands, East Anglia, S.W. and S.E. England, but have been chiefly in the east.



GENERAL COMMENTS

Alterations in distribution

Examination of the pre- and post-1970 distribution reveals that some interesting changes have taken place. Percentage changes given below are calculated from the number of vice-counties in which a species has been recorded before and after 1970. Although such records are as much determined by the availability of entomological expertise as they are by the incidence of species, the observed *increase* in distribution of *D. simplex*, *D. vulgaris*, *P. discolor* and *P. sericea* suggests that the marked decrease in recorded distribution of at least half of our British donaciine species is a

genuine problem which calls for an explanation, and not just the result of a reduction in entomological fieldwork.

| A. Post-1970 increase. | | B. No change (\mp 10%) | | C. Decrease in post-1970 distribution | | | |
|------------------------|---------|---------------------------|---------|---------------------------------------|---------|-------------------------|---------|
| Species | % Diff. | Name | % Diff. | Name | % Diff. | Name | % Diff. |
| <i>P. discolor</i> | +57% | <i>D. clavipes</i> | +4.4% | <i>D. versicolora</i> | -15% | <i>D. impressa</i> | -41% |
| <i>P. sericea</i> | +55% | <i>P. affinis</i> | 0.0% | <i>D. thalassina</i> | -16% | <i>D. dentata</i> | -64% |
| <i>D. vulgaris</i> | +28% | <i>D. semicuprea</i> | -3.1% | <i>M. mutica</i> | -27% | <i>D. crassipes</i> | -68% |
| <i>D. simplex</i> | +15% | | | <i>D. obscura</i> | -33% | <i>D. sparganii</i> | -70% |
| | | | | <i>D. marginata</i> | -39% | <i>M. appendiculata</i> | -81% |
| | | | | <i>D. cinerea</i> | -40% | <i>D. aquatica</i> | -83% |
| | | | | <i>P. braccata</i> | -40% | <i>D. bicolora</i> | -89% |

Host plants

The British Donaciinae are associated with the Nymphaeaceae and Haloragaceae of the Dicotyledones and with seven families of the Monocotyledones: Alismataceae, Typhaceae, Sparganiaceae, Potamogetonaceae, Zosteraceae, Cyperaceae and Gramineae. To a large extent the host plant on which the adult feeds is the same as that on which cocoons have been taken and upon which the larvae feed. Donaciine species can be grouped according to their host plant associations. *Donacia crassipes* and *Macrolea appendiculata* are the only species associated with Dicotyledones, the former with yellow and white water lilies (*Nuphar* and *Nymphaea* of the Nymphaeaceae), and the latter with water milfoil (*Myriophyllum* of the Haloragaceae). Of the Monocotyledones *Sagittaria sagittifolia* (Alismataceae) is host to *Donacia dentata* and *Potamogeton* (Potamogetonaceae) to *D. versicolora*. *Sparganium* of the Typhaceae is the host of *D. bicolora*, *D. simplex*, *D. sparganii*, *Plateumaris sericea* and possibly *D. vulgaris*, and *Typha* is host to *D. cinerea* and also *D. vulgaris*, the first three sometimes occurring in the same locality on *Sparganium erectum*. Of the Cyperaceae *Scirpus* is a host to *D. impressa* whilst various species of *Carex* support *D. aquatica*, *D. obscura*, *D. impressa*, *D. thalassina*, *Plateumaris affinis* and *P. discolor*, while of the Gramineae *Glyceria* species are eaten by *D. semicuprea* and *Phragmites communis* is host to *D. clavipes* and *P. braccata*.

Early stages

Oviposition differs in the British genera, the eggs of *Plateumaris* being laid on foliage above water while those of *Donacia* are laid, usually in clusters or rows, in gelatinous envelopes on the undersides of floating leaves or submerged foliage and stems. The life cycle of donaciines appears to be related to the growth habit of their host plants and they can be divided on the basis of observed dates of occurrence.

The first group includes *D. thalassina*, *obscura*, *clavipes*, *vulgaris* and *cinerea*, active as adults during the spring and early summer, in which the larvae reach maturity and pupate by the autumn of the year in which oviposition took place. These soon emerge but remain as adults and overwinter within cocoons which apparently maintain a connection with intracellular air spaces within the host plant, attached to roots and stems in the mud of lakes and streams.

The second group includes *D. dentata*, *sparganii* and *versicolora*, which are active as adults during the second part of summer and in the autumn. These overwinter as larvae which complete their growth and pupate during the first half of the year following oviposition, finally emerging around midsummer. Adults of the latter

group do not, therefore, overwinter but may sometimes be found around midsummer, awaiting emergence fully developed within their cocoons.

In contrast to foodplants of the first group (*Carex*, *Phragmites*, *Typha* and *Sparganium erectum*), the foliage of plants upon which adult beetles of the second group feed (*Sagittaria*, *Potamogeton* spp. and *Sparganium emersum*) does not reach full development until after midsummer.

Collecting techniques

The simplest and most informative method of detecting and collecting the adult beetles is by direct searching of the leaves and flowers of their host plants, especially in warm sunshine, during their months of occurrence. Under certain circumstances alternative methods may be useful. The use of a sweep-net is useful when the beetles are infrequent and hidden in dense foliage such as stands of reeds and sedges; this method is especially effective for species such as *Donacia aquatica*, *impressa*, *thalassina*, *Plateumaris sericea* and *affinis* (pers. observ.). Alternatively plants growing together in a dense stand can be tapped with a stick over a beating tray. Stainforth (1944) collected *D. impressa* and *clavipes* by tapping bulrush (*Scirpus lacustris*) and reeds (*Phragmites australis*), respectively, watching for the fallen insects on the surface of the water. Species like *D. crassipes*, *dentata*, *versicolorea* and *sparganii* that rest on the floating leaves of their foodplants (*Nuphar*, *Sagittaria*, *Potamogeton* and *Sparganium*) may be caught by quickly submerging the leaf with the beetle on it. They cannot then take flight, but float to the surface and can then be picked off. The use of an extendable 'clap net' (see figure) can also be very effective, and may be necessary when negotiating an inaccessible environment with deep water and mud. Collection of *Macrolea* species which inhabit submerged water plants calls for the use of a water net or rake.



Extendable clap net.

According to Stainforth (1944) a further useful method is to search for cocoons from late August until the following May or June. September is probably the best month since the weather is still warm, the water in ponds and canals at a low level, and sufficient time will have elapsed to allow the adults to emerge from the pupae and become fully hardened. Apparently some species may remain in such a condition within the cocoons for as long as 8 months! Unfortunately this method leads to habitat destruction since the foodplants must be pulled up with their roots and rhizomes intact, washed free of mud and then carefully searched. It is often difficult to pull up aquatic plants by the roots especially if they are matted together as is the case with *Carex* and *Scirpus*. Stainforth found the cocoons of *D. versicolorea* difficult to collect because the host plant *Potamogeton natans* grows in deep water and does not come up by the roots very readily, and he found that the cocoons of *D. clavipes* were usually buried at a depth of six to eight inches amongst the roots of *Phragmites* growing in water.

KEYS FOR THE IDENTIFICATION OF DONACIINE BEETLES BY M. L. COX

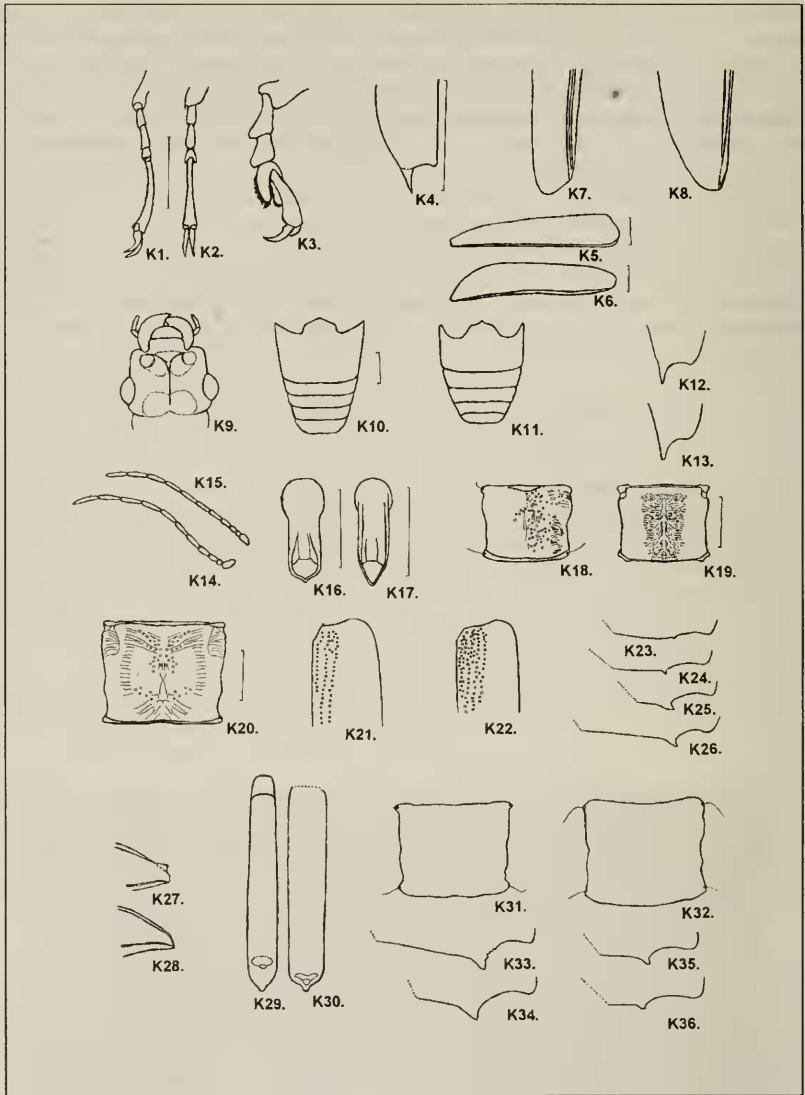
Subfamily DONACIINAE: key to genera

- 1 Dorsally not metallic, usually yellowish with dark brown or black. Tarsi slender, subcylindrical, almost glabrous ventrally, segment 3 small, unlobed, segment 5 longer than 1 to 4* combined (Figs K1,2). Elytra with double rows of punctures and with black or dark brown stripes; truncate, unidentate apically (Fig. K4). Usually under water on hostplants..... *Macrolea*
- Dorsally metallic. Tarsi broad, flattened with dense pilosity ventrally, segment 3 bilobed, segment 5* at most twice as long as 3 (Fig. K3). Elytra metallic, apices without tooth (Figs K7,8). Usually on water plants..... 2
- 2 Elytra somewhat flat dorsally (Fig. K5), suture normal, not inverted apically (Fig. K7). Mandibles short, not protruding (Figs K37,38). Males sometimes with small tooth interoapically on metatibiae. Abdominal ventrite 1 longer than following 4* combined (Fig. K10)..... *Donacia*
- Elytra vaulted dorsally (Fig. K6), suture inverted at apex, so that internal margin becomes the external one (Fig. K8). Mandibles protruding (Fig. K9). Males with small tooth interoapically on meso- and meta-tibiae. Abdominal ventrite 1 at most as long as following 4* combined (Fig. K11)..... *Plateumaris*

Genus Macrolea Samouelle: key to species

- 1 Terminal spine of elytra usually more slender, more sharply pointed (Fig. K12). Elytra apically with more transverse emargination (Fig. K12). Males with median lobe of aedeagus broader, abruptly narrowed apically, with small median lip (Fig. K16); antennae relatively longer, especially apical segment with length/width ratio about 6.6 (Fig. K14). Body usually longer, 6.0–7.5 mm. *appendiculata* (Panzer)
- Terminal spine of elytra usually less slender, less sharply pointed (Fig. K13). Elytra apically with less transverse emargination (Fig. K13). Males with median lobe of aedeagus narrower, more gradually narrowing to a rounded apex which lacks a median lip (Fig. K17); antennae relatively shorter, especially apical segment with length/width ratio about 5.7 (Fig. K15). Body usually shorter, 5.0–7.0 mm..... *mutica* (Fabricius)

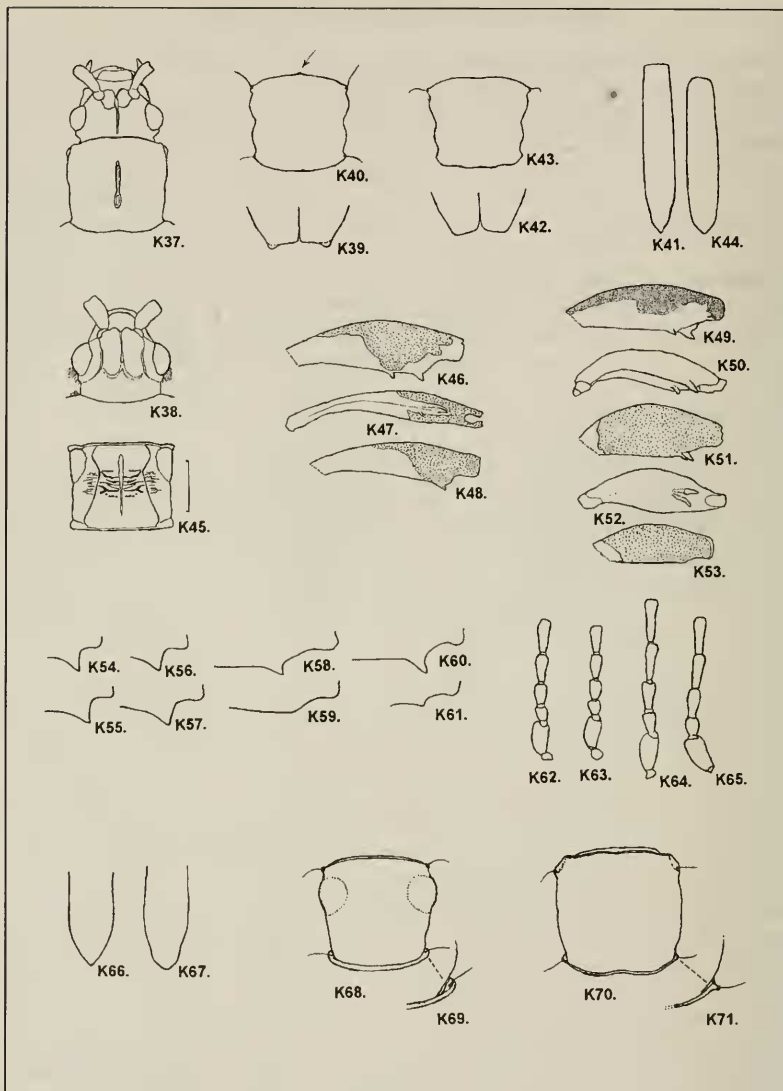
*Note. Tarsal segment 4 is vestigial and, as in most chrysomelids, is inconspicuous.



Figs. K1, 2, 4, 12, 14 & 16 *Macroplea appendiculata*; K13, 15, & 17 *Macroplea mutica*; K3 & 7 *Donacia crassipes*; K5, 10 & 18 *Donacia aquatica*; K6 *Plateumaris affinis*; K8 & 11 *Plateumaris sericea*; K9 *Plateumaris* sp. head dorsal; K19 *Donacia sparganii*; K20 *Donacia marginata*; K21, 23, 24, 27, 29 *Donacia impressa*; K25, 26, 28, 30 *Donacia thalassina*; K31, 33, 34 *Donacia obscura*; K22, 32, 35, 36 *Donacia bicolora*; K1-3 right metatarsus (K1 & 3 lateral, K2 dorsal); K4 left elytron dorsal; K5, 6 right elytron lateral; K7, 8, 12, 13 apex left elytron dorsal; K10, 11 venter; K14, 15 right antenna; K16, 17, 29, 30 median aedeagal lobe dorsal; K18, 19, 20, 31, 32 pronotum dorsal; K21, 22 base right elytron; K23-26, 33-36 posterior half right metafemora; K27, 28 apex left elytron lateral. Scale line = 1 mm.

Genus Donacia Fabricius: key to species

- 1 Pronotum and elytra pubescent (Plate I, Figure 1). Usually bronze dorsally, rarely elytra metallic dark green..... *cinerea* Herbst
- Pronotum and elytra not pubescent (Plates I & II, Figures 2–15). Various colours..... 2
- 2 Antennae and legs, including tarsi, entirely reddish brown (Plate I, Figure 5)..... *clavipes* Fabricius
- Antennae and legs at the most only partly reddish brown (Plate I, Figure 2)..... 3
- 3 Antennae and legs, except claws, entirely black with indistinct metallic reflection, or sometimes legs brightly metallic (Plate I, Figure 7)..... 4
- Antennae and legs usually partly reddish brown (at least one quarter or third of femora) (Plate I, Figure 2), sometimes the antennae are entirely dark..... 10
- 4 Pronotal disc distinctly and coarsely punctured (Fig. K18). Hind femora in both sexes usually with one spine..... 5
- Pronotal disc impunctate or at most with few small indistinct punctures, finely transversely rugose (Fig. K19). Hind femora of both sexes usually with two spines (one very small); sometimes, in addition, with several very small spines posteriorly..... *sparganii* Ahrens
- 5 Elytra green, bluish-green along suture; interstices 2–6 or 7 reddish (golden, coppery, blue or purple in part) (Plate I, Figure 7)..... *aquatica* (Linnaeus)
- Elytra unicolorous or with interstices 3–5 red, blue or purple in basal fourth..... 6
- 6 Pronotum dorso-laterally and laterally strongly rugose, with a few coarse punctures; rugosities are irregular and transversely or obliquely orientated, smooth and shiny (Fig. K20). Elytra bronze brown, lateral margin greenish, usually with interstices 7–9 and 2–5 in basal fifth red, blue or purple (Plate I, Figure 8); sometimes all of these markings absent..... *marginata* Hoppe
- Pronotum dorso-laterally and laterally not distinctly rugose, sometimes with a few fine rugosities, usually very coarsely and densely punctured, punctures sometimes confluent. Elytra without red markings..... 7
- 7 Anterior margin of pronotum almost straight or slightly convex between anterior angles in dorsal view (Fig. K19). Abbreviated scutellar stria usually distinct (Fig. K21)..... 8
- Anterior margin of pronotum slightly concave between anterior angles (Fig. K32). Abbreviated scutellar stria usually indistinct (Fig. K22)..... 9
- 8 Hind femora with small usually obtuse tooth, sometimes acute or missing (Figs K23,24). Elytra with suture distinctly raised at apex (Fig. K27). Males with median lobe of aedeagus narrower, gradually broadening to apex which narrows more gradually and with less distinct median lip (Fig. K29). Usually either deep brassy or bronze dorsally (Plate II, Figure 12)..... *impressa* Paykull
- Hind femora with tooth long and acute, sometimes greatly reduced (Figs K25,26). Elytra usually without suture distinctly raised at apex (Fig. K28). Males with median lobe of aedeagus broader, subparallel-sided over much of length, gradually narrowed at apex with distinct median lip (Fig. K30). Dorsal colour more variable, brassy, bronze, sometimes greenish..... *thalassina* Germar
- 9 Dorsal surface and legs dull deep bronze, without green reflection (Plate II, Figure 10). Pronotum usually with anterior angles distinct, especially laterally



Figs. K37 *Donacia semicuprea*, head and pronotum dorsal; K38 *Donacia vulgaris* head, dorsal; K39-41 *Donacia vulgaris*; K42-44 *Donacia simplex*; K45, 49, 50 *Donacia dentata*; K46-48 *Donacia crassipes*; K51-53 *Donacia versicolora*; K54, 55, 62, 63, 66 *Plateumaris discolor*; K56, 57, 64, 65, 67 *Plateumaris sericea*; K58, 59, 68, 69 *Plateumaris braccata*; K60, 61, 70, 71 *Plateumaris affinis*; K39, 42 elytral apex dorsal; K40, 43, 45 pronotum dorsal; K41, 44, 66, 67 median aedeagal lobe dorsal; K46, 48, 49, 51, 53 right metafemora lateral; K47, 50, 52 left antennal segments 1-5; K54-61 posterior half right metafemora lateral; K62-65 left antennal segments 1-5; K68, 70 pronotum dorsal; K69, 71 enlargement of right basal part of pronotum. Scale line = 1 mm.

- (Fig. K31). Femoral teeth large in both sexes (Figs K33,34)
 *obscura* Gyllenhal
- Dorsal surface and legs bright golden green or darker greenish bronze (Plate II, Figure 9); rarely entirely blue. Pronotum usually with anterior angles indistinct, especially laterally (Fig. K32). Femoral teeth in both sexes smaller, about half the size (Figs K35,36)..... *bicolora* Zschach
- 10 Hind tibiae not usually finely toothed along ventral ridge. Hind femora usually without tooth..... 11
- Hind tibiae finely toothed (teeth may be acute or obtuse) along ventral ridge. Hind femora usually dentate..... 13
- 11 Disc of pronotum in mid-line with a small shallow anterior and larger, deeper posterior fovea, these connected by a narrow longitudinal groove (Plate II, Figure 11 and Fig. K37); majority of discal punctures not confluent, interspaces smooth and shining. Head without a distinct occipital groove along inner margin of eyes, without a longitudinal convexity on each side of median longitudinal fronto-vertical groove (Fig. K37). Elytra gently rounded in basal half, slightly broadened to middle (Plate II, Figure 11)..... *semicuprea* Panzer
- Disc of pronotum in mid-line without foveae but sometimes with indistinct fine median longitudinal groove; disc with interspaces narrow, usually dull, finely microsculptured, punctures often confluent. Head with a distinct occipital groove along inner margin of eyes, and with a distinct longitudinal convexity on each side of median longitudinal fronto-vertical groove (Fig. K38). Elytra sub-parallel in basal half, not broadening to middle (Plate II, Figure 14)..... 12
- 12 Apices of elytra usually distinctly emarginate, rarely straight (Fig. K39). Elytra usually red, blue, purple, golden, brassy or a combination of these colours between interstices 1–4 or 5, rarely unicolorous dark green (Plate 1, Figure 6). Dorsal part of fore-tibiae usually darkened, only partly reddish. Anterior margin of pronotum in mid-line usually with a small protuberance (Fig. K40). Males with median lobe of aedeagus gradually, sinuately narrowed towards apex, with a sharper point (Fig. K41)..... *vulgaris* Zschach
- Apices of elytra truncate, usually straight or sometimes very indistinctly emarginate (Fig. K42). Elytra unicolorous, margin and interstices 1–5 or 5 without contrasting coloration (Plate II, Figure 14). Dorsal part of fore-tibiae usually entirely reddish. Anterior margin of pronotum in mid-line usually without a small protuberance (Fig. K43). Males with median lobe of aedeagus more evenly, abruptly narrowed towards apex, with more rounded, blunt point (Fig. K44)..... *simplex* Fabricius
- 13 Pronotum strongly rugose throughout, usually coarsely and densely punctured on disc (Fig. K45). Hind femora without or with one or two teeth; when two these are situated close together and not more than the length of the anterior tooth apart (Figs K49–53)..... 14
- Pronotum not strongly rugose, strongly microsculptured throughout with fine grooves and reticulations, disc with indistinct sparse, shallow punctures. Hind femora with one obtuse tooth or with two teeth which are more widely separated, at least two times the length of the anterior tooth apart (Figs K46–48).
 *crassipes* Fabricius
- 14 Elytra with interstices dull, very finely, usually densely and evenly punctured. Hind femora in both sexes usually with two teeth, one smaller situated slightly anterior to the larger posterior tooth on the ventral surface (Figs K49,50). Ventral half of femora usually pale reddish in contrast to dark metallic dorsal half (Fig. K49)..... *dentata* Hoppe

- Elytra with interstices shining, very finely and sparsely punctured (almost impunctate). Hind femora in males with two teeth set almost side by side and subequal in length (Figs K51,52); in females with very small obtuse tooth (Fig. K53), sometimes missing. Ventral half of femora usually almost entirely dark (apical two-thirds of femora almost entirely black) (Fig. K51)
..... *versicolorea* (Brahm)

Genus Plateumaris Thomson: key to species

- 1 Elytra with 2 impressions on each near suture, one about one-third length from base, the other one-third length from apex, the latter sometimes indistinct. Pronotum glabrous except for a few setae posteriorly. Abdomen concolorous with rest of body. Metafemora with strong triangular tooth in both sexes (Figs K54-57)..... 2
- Elytra without impressions. Pronotum very finely pubescent. Abdomen brown or reddish, not concolorous with rest of body. Males with strong metafemoral tooth (Figs K58,60), females without a tooth (Fig. K59) or with blunt angulation (Fig. K61)..... 3
- 2 Pronotal disc with punctuation distinctly stronger in mid-line, obliquely wrinkled throughout. Antennal segments 3 and 4 less elongate (Figs K62,63), males with length/width ratio of segment 4 about 2.0. Males with median lobe of aedeagus evenly narrowed apically to pointed tip (Fig. K66). Colour variable, metallic green, blue violet or gold, sometimes black..... *discolor* (Panzer)
- Pronotal disc with punctuation equal and fine, smoother, without oblique wrinkles. Antennal segments 3 and 4 more elongate (Figs K64,65), males with length/width ratio of segment 4 about 2.6. Males with median lobe of aedeagus not evenly narrowed apically and with apical median lip (Fig. K67). Colour variable, as *discolor*..... *sericea* (Linnaeus)
- 3 Pronotum distinctly narrowed posteriorly, with a tuberosity at each side just behind the indistinct anterior angle; anterior setiferous pore close to anterior margin; posterior setiferous pore not on conical process (Figs K68,69). Elytral interstices strongly cross strigose. Black with a green or violet reflection, pronotum often greenish or bluish. Antennae and legs reddish brown. Body length usually longer, 8.5-11.5 mm. On *Phragmites australis*
..... *braccata* (Scopoli)
- Pronotum subrectangular, with sides subparallel and without a tuberosity at each side behind the anterior angle which is prominent, and anterior setiferous pore distant to anterior margin with posterior setiferous pore on conical process (Figs K70,71). Antennae and legs orange brown. Males black with a purple or violet reflection, sometimes basally reddish brown. Females coppery (Plate II, Figure 16). Body length usually shorter, 5.0-9.0 mm. Usually on *Carex*
..... *affinis* (Kunze)

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Plate I. BRITISH DONACIIDS



1. *Donacia cinerea* Herbst



2. *Donacia dentata* Hoppe



3. *Donacia versicolore* (Brahm)



4. *Donacia crassipes* Fabricius



5. *Donacia clavipes* Fabricius



6. *Donacia vulgaris* Zschach



7. *Donacia aquatica* (Linnaeus)



8. *Donacia marginata* Hoppe